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ABSTRACT

Identification of factors contributing to the timing of first contraceptive use by girls is an important consideration in structuring primary prevention programs to reduce teenage pregnancies. Interviews with 120 girls aged 12-19 in a study of sexual, contraceptive, and pregnancy decision making covered six areas: (1) demographic information; (2) knowledge, attitudes, and practices relating to birth control and sexuality; (3) sexual and obstetric history; (4) environmental pressures; (5) personality factors; and (6) decision-making style. Relevant interview information from 101 sexually active girls was examined for its relationship to timing of first contraceptive use (the length of time between first intercourse and first use of contraception). Six variables explained a significant portion of the variance in timing of first contraception: belief that pregnancy depends on luck, sister previously pregnant, friend previously pregnant, knowledge about parents' and siblings' contraceptive experiences, conflict about birth control, and reaction to boyfriend's disapproval. Girls who had a feeling of control over pregnancy, whose beliefs and knowledge about birth control were accurate, whose friends and siblings favored birth control and had not been pregnant, and who could solicit and take into account the opinions and beliefs of others contracepted earlier than other girls. (Author/NRB)

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FEMALE ADOLESCENTS: FACTORS DIFFERENTIATING EARLY-, MIDDLE-, LATE-, AND NEVER-CONTRACEPTORS

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Young Adult and Adolescent Decision Making About Contraception Project

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FEMALE ADOLESCENTS: FACTORS DIFFERENTIATING EARLY-, MIDDLE-, LATE-, AND NEVER-CONTRACEPTORS

The problem of teenage pregnancy and childbearing has been well documented, and efforts at ameliorating the negative consequences of teenaged childbearing are beginning to be successful. However, the more difficult task of primary prevention has not been as successful in delaying youthful childbearing as parenting programs have been in improving their pregnancy outcomes.

The purpose of this paper is to examine factors contributing to the timing of first contraceptive use by girls. We hope that this information, together with that on patterns of use among both boys and girls, will help us to structure primary prevention programs that can be successful in reducing unintended pregnancies among teenagers.

BACKGROUND

Cross-sectional and descriptive studies of teenage contraceptive use have been very helpful in delimiting the parameters of the problem. Predictive longitudinal studies and qualitative investigations deepen our understanding of why teens do or do not contracept. The factors that these studies have identified as influencing or being associated with adolescent contraceptive use can be categorized along six dimensions: demographic characteristics; sex and contraceptive knowledge, attitudes, and practices; past birth control and pregnancy experiences; environmental pressures; personality factors; and decision-making style.

Demographic Characteristics

While more white teenagers than black teenagers use contraception on the occasion of first intercourse, black teenagers are more likely to use the more effective medical methods--pill, IUD, and diaphragm (Zelnik & Kantner, 1978). Mindick, Oskamp, & Berger (1978) found no racial differences, however, and no meaningful demographic differences in the percentage of contraceptive clinic users who returned as scheduled six months after beginning a contraceptive program (returning contraceptors) and those who did not return or who were unintentionally pregnant (problem contraceptors). Kantner & Zelnik (1973) identified household composition as another demographic variable predictive of contraceptive use. Teenage girls who lived alone or in father-absent households were more likely to contracept than those who lived with their fathers.

Knowledge, Attitudes, and Practices

Poor knowledge about sex and contraception is frequently identified as a factor in poor contraceptive behavior (Mindick & Oskamp, 1977; Mindick, Oskamp, & Berger, 1978; Shah, Zelnik, & Kantner, 1975; Zelnik & Kantner, 1977; Kantner & Zelnik, 1973; Delcampo, Sorakowski, & Delcampo, 1976; Reichelt & Werley, 1976). Yet even those teenagers who understand the need for contraception do not have accurate information (Diamond, Steinhoff, Palmore, & Smith, 1973), and those who have access to the best information about birth control do not contracept well (Cvetkovich, Grote, Bjorseth, & Sarkissian, 1975). Thus the problem is more complicated than simply lack of information.

Attitudes and experiences also contribute to poor use of contraception. Mindick, et al.'s (1978) returning contraceptors were less proud or happy about their first periods, were older at first coitus, had had fewer partners, and expected to have intercourse less frequently in the coming month than the problem contraceptors. Problem contraceptors were more likely than returning

contraceptors to belive that oral contraceptives cause future infertility and that if teenage boys do not have sex when they "need" it, "they can almost go crazy." Similarly, Rogel, Petersen, Richards, Shelton, & Zuehlke (1979) reported that the girls in their sample were reluctant to use contraception, which to them meant the pill, because of fears about its safety and side effects. Yet, Mindick, et al.'s (1978) returning contraceptors felt that the advantages of contraception outweighed the disadvantages and that contraception is effective in preventing pregnancy. They were more negative about pregnancy and more willing to stand up to disapproving peers and partners.

Birth Control and Pregnancy Experiences

Compared to girls who always or sometimes use birth control, never-users have a much higher chance of unintended pregnancy, and it is after this pregnancy that they use birth control, at least occasionally (Zelnik & Kantner, 1978).

Environmental Pressures

Mindick, et al.'s (1978) returning contraceptors were more independent of the influences of peers and partners, while problem contraceptors turned to their friends for information and had more sexually experienced girl friends. Rogel, Zuehlke, Petersen, Richards, & Shelton (in press) also note the importance of modeling, since almost all of the girls in their sample, who were at high risk for unintended pregnancy, knew someone who had been pregnant as a teenager and who kept the baby. They also reported that the girls experienced strong internal and external pressures to keep the baby once they became pregnant even though they believed that their significant others disapproved of teenage parenting.

Personality Factors

Goldsmith, Gabrielson, Gabrielson, Matthews, & Potts (1972) reported that women who have more individual control over events in their lives are more likely to use birth control. Similarly, Mindick, et al. (1978) reported that their returning contraceptors were more internal-oriented than the problem contraceptors on certain items, that they reported greater independence from social influence by friends and male partners, and that they had longer future-time perspectives. Cvetkovich, et al. (1975) suggested that a "certain amount of individual differentiation is needed for effective contraceptive activity" (261). Goldsmith, et al. (1972) indicated that acceptance of one's own sexuality is a more important correlate of contraceptive use than other factors, such as exposure to sex education, knowledge of sex and contraception, and religious background.

Decision-Making Style

The general consensus is that most teenagers who become pregnant are not pregnant intentionally. Indeed, more often it seems that they are pregnant from a failure to decide (Campbell, Townes, & Beach, 1975). Some have attributed this to the immature thought patterns of adolescents who are unable to delay gratification or to think abstractly (Cobliner, 1974; Crider, 1976; Pannor, Evans, & Massarik, 1971). Adelson's (1975) report that young adolescents rarely reason in cost-benefit terms, instead making their choices arbitrarily and impulsively, is corroborated to some extent by Hatcher's (1973) finding that a girl's experience of sexuality and pregnancy is greatly influenced by whether she is in early, middle, or late adolescence. These researchers assert that adolescents are poor contraceptors because their cognitive processes lead to a widespread lack of planning, irrational thinking, and risk taking (Baizerman, 1971; Cobliner, 1974; Hill, 1973).

METHOD

The findings reported here are based on data from 101 sexually active girls out of 120 girls aged 12-19 interviewed in the Teen Family Planning, Prenatal, and Pediatric Acute Care Clinics of Michael Reese Hospital and Medical Center in Chicago. The interviews were conducted between April and August 1979, using a semi-structured interview protocol that we designed to elicit information in six categories: (1) demographic information, (2) knowledge, attitudes, and practices relating to birth control and sexuality, (3) sexual and obstetric history, (4) environmental pressures, (5) personality factors (such as self-esteem, interpersonal relationships, and health locus of control), and (6) decision-making style. The sample reflected the economically depressed South Side area of Chicago in which the Medical Center is located rather than the patient population the Medical Center actually serves. Almost 87% of our respondents lived within one hour's travel time of the Medical Center by public transportation, and 98% were black. The sample and preliminary findings are described in detail elsewhere (Rogel, Zuehlke, Petersen, Richards, & Shelton, in press).

Out of the relevant sections of the interview, we selected those items that we expected, on the basis of reports in the literature and on the basis of our experiences in designing an intervention (Zuehlke, Rogel, & Petersen, in press), to influence the timing of first contraceptive use. Our first step was to examine the relationship between these individual variables and the timing of first contraception by performing chi square and one-way analyses of variance. Those variables that had a significant relationship with the dependent variable, timing of first contraception, were then entered into a stepwise multiple regression in order to determine their relative predictive capability. Finally we examined the direction of the relationships to distinguish those factors most predictive of early-, middle-, late-, or never-use of contraception.

To measure timing of first contraceptive use, we asked the girls how soon after first having intercourse they first used birth control. In this way we controlled for differences in the age at first intercourse. Early-contraceptors were classified as having used birth control for the first time prior to first intercourse, at first intercourse, or within one month of first intercourse. Middle-contraceptors first used contraception between one and twelve months after first coitus. Late-contraceptors first used contraception one to five years after first coitus. Never-contraceptors were sexually active girls who had never used birth control.

Demographic information examined in the first stage of analysis included: age, source of family income, whether girl lived with her mother, whether girl lived with her father, how many people lived in her household, whether she was in school, how far she planned to go in school, if not in school why not, and how far each of her parents had gone in school.

Items included under sexual and obstetric history included: age at menarche, feelings about first menstruation, age at first intercourse, extent of planning of first coitus, whether she had ever been pregnant, age at first pregnancy, outcomes of the first three pregnancies (one girl was pregnant for the fourth time when we interviewed her), and number of years of sexual activity prior to first pregnancy.

Questions concerning knowledge, attitudes, and practices relating to birth control and sexuality included: attitude about abortion, attitude about using birth control, her estimate of her chances of becoming pregnant using her chosen method of birth control (if she used one), her estimate of her chances of becoming pregnant without using birth control, level of responsibility for non-use of birth control as reflected in her reason for not using it, how frequently she used birth control when having sex, what she would do if she became preg-

nant (only asked of never-pregnant girls), number of reasons (out of 15 possible) that she said would probably or definitely keep her from coming to the family planning clinic, number of reasons (out of 14 possible) that she gave for sometimes or many times not using birth control, and her agreement or disagreement with the following questions and statements:

* Having a baby shows that a girl is a real woman.
* I believe having a baby is more risky than taking birth control pills.
* I worry about the possibility of other people seeing my birth control supplies.
* I believe having an abortion will affect my ability to have a baby later in life.
* Whether or not a woman gets pregnant depends mostly on luck.
* I believe taking birth control pills will affect my ability to have a baby later in life.
* I feel more in control of things when I use birth control.
* A woman is most likely to get pregnant during her period.
* Contraceptive foam or jelly will keep a woman from getting pregnant if she uses it right after intercourse.
* A condom is an effective method of birth control.
* A woman will never get pregnant as long as her partner takes his penis out of her vagina before he comes or has a climax.
* If a woman who uses birth control pills forgets to take one, she can take two the next day and still be safe.
* If a woman does not have a climax she will not get pregnant.
* Having sex strengthens my relationship with my boyfriend.
* When I have sex I feel awkward and embarrassed.
* Sex keeps our relationship going.
* Having sex is something I look forward to.
* Having sex is something I don't think ahead about.
* Having sex generally makes me feel good.
* Having sex makes me feel guilty.
* Sex is more fun for my boyfriend than for me.
* Sex has felt forced upon me at times.

Environmental pressures were explored with the following items: the importance of church, how old her mother was when first pregnant, her assessment of her mother's current happiness, whether her sister had ever been pregnant, how old her sister was at first pregnancy, whether her mother or sister had ever had an abortion, whether her mother or sister had ever given a baby up to be raised by someone else, how her parents, boyfriend, and friends felt about abortion and birth control, whether her parents or siblings used contraceptives, her knowledge of parents' and siblings' experiences using contraceptives, whether

a close friend had ever been pregnant, proportion of her friends who were sexually active, whether she and her friends think alike, and whether she felt she sticks with the group.

Intrapsychic measures were tapped with the following: what she planned to do when she finished her schooling, how many out of nine items she felt she could do with her life, hobbies, how she related to her family and to her mother, what she expected her life to be like at 30 compared to her mother's life, Health Locus of Control Scale (Wallston, Wallston, Kaplan, & Maides, 1976), Rosenberg Self-Esteem Scale (1965), and interviewer ratings of object relations, conflict about sexuality, conflict about birth control, cognitive style, autonomy, and openness.

Decision-making style was assessed with the following questions: whether she had plans to ever marry, how many children she wanted to have eventually, when she wanted to have her children, how she handled situations in which she wanted to do something about which her parents or her boyfriend disapproved, who decided when she and her boyfriend would have intercourse, what she considered to be her style of problem solving, and whether she discussed her problems with her friends.

Tables 1 and 2 summarize the results of the chi square and one-way analyses of variance in which each of the independent variables was examined in relation to the dependent variable, timing of first contraception. The majority of the variables were <u>not</u> significantly related to timing of first contraception. Those that were are listed in the tables.

The chi square analyses give us information only about possible trends. Even though there were 100 girls included in the analyses, there were too many cells with expected values less than five to permit computation of chi square. We suspect that this is because the sample tends to be homogeneous.

As a result of these analyses we entered the following variables into the stepwise multiple regression analysis (excluding those variables with too many missing values): (1) categorical variables: knowledge about parents' and siblings' birth control experiences (know, don't know), knowledge about parents' use of birth control (know, don't know), judged conflict about birth control (yes, no), sister previously pregnant (yes, no), friend previously pregnant (yes, no), living with father (yes, no), discuss problems with friends (yes, no), response to disapproval of boyfriend (don't do, get permission, do secretly, compromise, do anyway), source of family income (work, public assistance); and (2) continuous variables: look forward to having sex (1=none of the time, 3=all of the time) and pregnancy depends on luck (1=strongly disagree, 5= strongly agree).

RESULTS

The stepwise multiple regression analysis identified six variables as explaining a significant proportion of the variance (33.4%) in timing of first contraceptive use: belief that pregnancy depends on luck, sister previously pregnant, friend previously pregnant, knowledge about parents' and siblings' contraceptive experiences, conflict about birth control, and reaction to boyfriend's disapproval. Four of these variables (pregnancy depends on luck, friend previously pregnant, knowledge of family contraceptive experiences, conflict about birth control) contributed significantly to the solution. The results of the regression are reported in Table 3.

All of the contraceptors (early, middle, and late) disagreed that pregnancy depends on luck. Their mean responses ranged from 2.3 to 2.5 on a scale from 1 (strongly disagree) to 5 (strongly agree). Never-contraceptors were undecided, with a mean value of 3.2.

Neither early- nor middle-contraceptors had a close friend who had been pregnant, but late-contraceptors (all of whom had had a baby themselves) had a sister who had been pregnant. Late-contraceptors knew what their siblings' experience with contraception had been, but never-contraceptors knew about neither their siblings' nor their parents' experiences. Not surprisingly, never-contraceptors were judged by the interviewer to be conflicted about birth control, but early-contraceptors were not.

There were also some interesting differences in the girls' reactions to boyfriend's disapproval. Early- and middle-contraceptors said that when boyfriends disapproved of something they wanted to do, they would do it secretly. Early- and late-contraceptors said they would compromise, and middle-contraceptors said they would attempt to get permission. Thus, all of the contraceptors would somehow take into account their boyfriend's opinion. Never-contraceptors said they would do it anyway.

Several other variables were significantly related to timing of first contraceptive use based on the one-way ANOVAs but were not entered into the regression equation because their relationship with the dependent variable was not linear. These variables help to sharpen our understanding of when girls become contraceptive users.

Never-contraceptors were the youngest group, with a mean age of 16. Late-contraceptors were the oldest with a mean age of 18. Early- and middle-contraceptors were 17. (Age at first coitus was not related to timing of first contraceptive use.) Late-contraceptors believed that they had a 90% chance of getting pregnant when not using birth control; early- and middle-contraceptors reported their chances to be 80%, while never-contraceptors reported their chances to be 65%.

All groups agreed with the statement, "I'm not really in favor of birth control, but it's better than getting pregnant," though middle-contraceptors tended to be a bit more favorable than the others toward using birth control. Middle-, late-, and never-contraceptors reported their friends to be more favorable toward birth control than they were themselves. Early- and middle-contraceptors tended to disagree that taking birth control pills will affect their fertility, but never-contraceptors were undecided and late-contraceptors tended to agree. Most girls reported that they sometimes looked forward to having sex, but late-contraceptors reported looking forward to sex more often than the others.

DISCUSSION

In this paper we examined a variety of factors that we expected to be related to timing of first contraceptive use. After identifying those continuous variables that had a singificant linear relationship with timing of first contraception and those categorical variables that showed some relationship to the dependent variable, we entered them into a stepwise multiple regression. Two variables demonstrated a highly significant predictive association with timing of first contraceptive use: belief that pregnancy depends on luck and a close friend having previously been pregnant. All of the contraceptors disagreed that pregnancy depends on luck, while the never-contraceptors were undecided. Few early- and middle-contraceptors had a close friend who had been pregnant. Knowledge of parents' and siblings' experiences using birth control and conflict about birth control also contributed significantly to the regression solution. Using these variables and others significantly related to the timing of first contraception, we can characterize early-, middle-, late-, and never-contraceptors.

Early-contraceptors (those who began contracepting prior to or within one month of first coitus) and middle-contraceptors (those who began contracepting between one month and one year of first coitus) were not remarkably different from each other. Both groups believed that pregnancy did not depend on luck, and they judged their chances of getting pregnant when not using birth control to be about 80%. They further believed that using birth control (which, to them, meant birth control pills -- see Rogel, Zuehlke, et al., in press) would not affect their future fertility. The girls in these groups tended not to have friends who had been pregnant, and they took their boyfriends' opinions into account when making decisions.

The late-contraceptors (those who began contracepting one to five years after first coitus) shared some similarities with earlier contraceptors, but they also demonstrated some differences. Like the earlier contraceptors, they believed that pregnancy did not depend on luck and that using birth control /pills/ would not affect their future fertility. However, they judged their chances of getting pregnant when not using birth control to be about 90%. This high appraisal of their fertility is likely to be related to the fact that all of the late-contraceptors had had prior pregnancies. In addition, many of them had sisters who had been pregnant, and they knew what kind of experiences their siblings had had with contraception. Like the earlier contraceptors, they took into account their boyfriends' opinions. It seemed that the motivation of the late-contraceptors was to space or limit the size of their families while the motivation of the earlier contraceptors was to prevent pregnancies.

The never-contraceptors clearly differed from the contraceptors. They were undecided about whether pregnancy depends on luck and about how using birth control would affect their future fertility. Understandably, they were judged to be conflicted about birth control. They considered their chances of getting

pregnant when not using birth control to be only about 65%, and they did not know what kind of experiences their parents and siblings had had with contraception. Further evidence that their interpersonal skills were poor comes from their failure to take their boyfriends' opinions into account when they disagreed.

Thus, the factors that differentiate timing of first birth control use center around four areas: 1) feeling of control over pregnancy, 2) accuracy of beliefs and knowledge about birth control, 3) peer influence and modeling, and 4) quality of interpersonal relationships. Girls who had a feeling of control over pregnancy, whose beliefs and knowledge about birth control were accurate, whose friends and siblings favored birth control and had not been pregnant, and who could solicit and take into account the opinions and beliefs of others were able to contracept early in their sexual careers (within one year of first coitus).

We suspect that noncontracepting girls (and boys) who can be assisted in these four areas will be able to begin contracepting earlier than they would left to their own devices. Thus, we recommend that pregnancy prevention programs focus on these four goals: 1) enhancing a sense of control over pregnancy, 2) providing accurate information about birth control, 3) mobilizing peer influence in favor of birth control, and 4) encouraging communication about contraception within the family and within the peer group.

We think that pregnancy prevention programs may be especially effective among teenagers who are not yet sexually active since they can take in the information that is offered to them in a nonpressure situation. Because they will not have to make a decision about contraception before they next see their boyfriends or girlfriends, they will have time to process the information and deal with their conflicts.

In some cases, family interaction about contraception can be facilitated more easily before sexual activity is begun because the teens will not have to worry about revealing information about their sexual activity to their parents. Our findings show that teenagers who do not know their parents' contraceptive experiences are less likely to use contraception.

Another reason for focusing pregnancy prevention programs on teenagers who are not yet sexually active (as well as on those who are) is that these teens are likely to have fewer peer models for pregnancy. Thus, peer pressure in favor of contracepting can be mobilized more easily and more effectively.

We are testing these ideas in an intervention called the Young Adult and Adolescent Decision Making About Contraception (YADMAC) Project. The program consists of twelve weekly sessions (two of which are devoted to assessments of the project) on such topics as birth control, sexual decision making, teenage pregnancy and parenting, and overcoming pressures against contracepting. One of the special features of the project is that the sessions are led by a team of two or three trained peer leaders, who also are responsible for recruiting group members. A staff member attends all sessions to provide any backup that the peer leaders might need and to ensure that the message of the program comes through as clearly as possible. Peer leaders and group members have responded enthusiastically to the project. It is still too early to assess the impact of the program, but we hope to have some initial appraisals by next year's convention.

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Table 1

Chi Square Analyses *

Variable	Early	Middle	Late	Never
Isolate hobbies				yes
Productive hobbies	yes			
Homemaker hobbies			yes	
Positive feelings about menarche	no	no	yes	yes
Uninformed about menarche		yes		no
Always use birth control		yes		no
Take responsibility for not using bc		yes		yes
Put responsibility for bc on other	no		no	yes
Abdicate responsibility for birth control	yes	no		
Apparently conflicted about birth control	no			yes
Ever pregnant	no		yes	
Know whether parents use birth control				no
Know whether siblings use birth control			yes	no
Sister ever pregnant			yes	
Friend ever pregnant	no	no		
Live with father	no			yes
Has completed family	yes			no
Don't do when parents disapprove		yes	no	
Do secretly when parents disapprove		yes		no
Do anyway when parents disapprove				yes
Get permission when boyfriend disapproves		yes	no	
Do secretly when boyfriend disapproves	yes	yes		no
Do anyway when boyfriend disapproves		no		yes
Compromise when boyfriend disapproves	yes		yes	no
Discuss problems with friends			no	

* Significance levels cannot be reported because all of these analyses have cells with expected values of less than five.

Table 2

One-Way ANOVAs

Variable	F	p	deviation from linearity (p)	r	eta^2
Attitude toward birth control	2.532	.062	.053	-	.0748
Pregnancy depends on luck	5.378	.002	ns	.370	.1492
Taking birth control pills will affect fertility	5.433	.002	.052	-	.1519
Look forward to sex	4.750	.004	.001	-	.1380
Chances of getting pregnant when not using birth control	3.283	.024	.088	-	.0986
Number of knowledge questions answered incorrectly	2.665	.052	ns	.226	.0784
Cognitive style	5.009	.003	ns	-.348	.1444
Autonomy	2.564	.060	ns	-.229	.0779
Friends' attitudes toward birth control	5.968	.001	.0006	-	.1948
Age	3.797	.013	.022	-	.1081

Table 3

Results of Stepwise Multiple Regression

Variable	beta weight	F	p
Belief that pregnancy depends on luck	.406	19.104	<.001
Sister previously pregnant	.167	3.090	ns
Friend previously pregnant	.337	11.817	<.001
Knowledge of parents/siblings birth control experiences	.237	5.970	<.05
Conflicted about birth control	.186	4.065	<.05
Reaction to disapproval from boyfriend	.133	2.104	ns

Multiple R = .578
R Square = .334
Adjusted R^2 = .285
Overall F = 6.773, $p < .05$
N = 81